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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,725	08/01/2001	Akiyoshi Takada	TAKADA=5A	2477

7590 10/31/2003

BROWDY AND NEIMARK, P.L.L.C.  
624 Ninth Street, N.W.  
Washington, DC 20001

EXAMINER

DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/918,725

Applicant(s)

TAKADA ET AL.

Examiner

Tracy Dove

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. 09/403,385.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other:

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## **DETAILED ACTION**

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/403,385, filed on 1/6/00.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 8/1/01 has been considered by the examiner.

### ***Drawings***

The drawings were received on 11/06/01. These drawings are accepted by the Examiner.

### ***Claim Objections***

Claim 2 is objected to because of the following informalities: it appears the claim should recite "said lead member is electrically disconnected" (line 5). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Paterek et al., US 5,279,907, as evidenced by Linden, Handbook of Batteries, pages 1.3 and 14.49-14.50.

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Paterek teaches a sealed (closed) electrochemical container device including a safety vent (col. 1, lines 8-10). Paterek teaches a pressure release safety vent comprising a safety vent opening in at least one container portion of the container housing extending from one face of the container portion to the opposite face thereof, the safety vent opening being of selected cross-sectional area and shape; and a selected separate profoundly rupturable foil membrane fastened in covering and sealing relation with respect to the safety vent opening, the membrane being sized and configured in thickness to seal the safety vent opening before profoundly tearing away and rupturing to vent the container housing under a preselected internal housing pressure which might occur in the container housing (col. 2, lines 21-35). The pressure release safety vent is formed in the lid/cover of the container wherein the cover fits the container (col. 2, lines 37-44). A lid cover for a lithium battery is formed of stainless steel (col. 3, lines 32-35). The vent opening has a horse shoe shape (col. 3, lines 54-57). The opposite ends of the annular, horse shoe shaped opening 9 are spaced from each other a suitable distance to provide a hinge element 11 (bending fulcrum) as part of lid cover 2 to ensure that a portion of lid cover 2 remains integral with the lid cover in the event of profound rupture of the safety vent (col. 3, lines 60-65). Annular foil membrane 14 covers the safety vent opening 9 and is made of a nickel foil (col. 4, lines 18-34).

Paterek does not explicitly state the sealed electrochemical container includes a positive electrode, a negative electrode, a separator and an electrolyte housed in the container. Paterek discloses that the lid cover is particularly used for a lithium battery container. Batteries inherently contain a positive electrode, a negative electrode and an electrolyte (page 1.3 of Linden). A separator is used to separate the positive electrode and the negative electrode to

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prevent a short circuit. Lithium cells have separators between the positive electrode and the negative electrode (Figures 14.41 and 14.42 of Linden). Figure 14.41 and 14.42 show a lithium battery having a positive electrode, a negative electrode, a separator and a vent diaphragm located in the lid of the cell container. The cells shown in Figure 14.41 and 14.42 are impregnated with electrolyte. The lithium battery disclosed by Paterek inherently includes a positive electrode, a negative electrode, a separator and an electrolyte in the cell container, as evidenced by Linden.

Thus the claims are anticipated.

***Allowable Subject Matter***

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

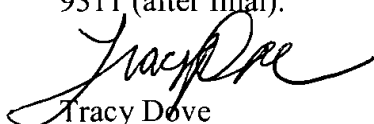
The following is a statement of reasons for the indication of allowable subject matter: the claim is directed toward a closed battery having a closing member including a valve element provided in a metal substrate and defined by a break line so as to serve as a releasing chip when the internal pressure of the battery is elevated. The valve element is bent from a bending fulcrum which does not have a break line. A metal foil is adhered to the inner surface of the metal substrate. The metal foil is connected to a lead member for conducting a current from an electrode element to a closing cap of the battery. When the valve element operates to release internal pressure in the battery, the lead member is electrically disconnected from the metal foil to interrupt the current.

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The prior art does not teach a lead member connected to a metal foil of the claimed valve element that ruptures at increased internal battery pressures to interrupt the current. Kaschmitter et al. 5,609,972 teaches a tab disconnect mechanism. However, in Kaschmitter as the internal battery pressure is increasing, the tab is disconnected at a first pressure and the pressure relief ruptures at a second pressure, wherein the first pressure is less than the second pressure (abstract). Kaschmitter does not teach a metal foil adhered to the inner surface of the pressure relief and connected to the tab. Harada et al. 5,821,008 teaches a tab disconnect mechanism. However, in Harada as the internal battery pressure is increasing, the tab is disconnected at a first pressure and the pressure relief ruptures at a second pressure, wherein the first pressure is less than the second pressure (col. 6, lines 37-50). Harada does not teach a metal foil adhered to the inner surface of the pressure relief and connected to the tab. Paterek is silent regarding the connection of the electrodes to the container.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday-Thursday (9:00 AM-7:30 PM). My supervisor is Pat Ryan, who can be reached at (703) 308-2383. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax numbers are 703-872-9310 (after non-final) and 703-872-9311 (after final).



Tracy Dove  
Patent Examiner  
Technology Center 1700, Art Unit 1745

October 29, 2003